



# Illinois Department of Transportation

## Memorandum

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To: DIRECTORS, DEPUTY DIRECTORS, AND BUREAU CHIEFS  
From: Dianna L. Taylor  
Bureau Chief of Personnel Management  
Subject: Technical Vacancy  
Date: January 12, 2016

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Attached are the Position Summary Sheet and Position Description for the vacant technical position listed below. Please post this vacancy announcement January 13, 2016 in the designated areas.

The deadline for applicants to submit their names for consideration is **4:30 p.m.** on **Wednesday, January 27, 2016**. Applicants will not be accepted after that time and date.

**NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position.**

All applicants will receive a position description for the position they are applying for. If you have any questions, please contact Halie Zulauf or Denise Hamilton at 217/782-5594.

CE V

Geometrics Engineer  
Region 4/District 6/Program Development  
Highways  
Springfield

Attachments  
40547

Technical Applications (PM 1080) **must be received** by the Bureau of Personnel Management, Room 113, 2300 South Dirksen Parkway, Springfield, IL 62764 (Fax# 217/557-3134) by **Wednesday, January 27, 2016**, 4:30 p.m. Please include address, daytime phone and position for which applying if not already listed on application. Applicants will be notified in writing to schedule interviews.

**NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position.**



## Illinois Department of Transportation

An Equal Opportunity Employer

### Position Summary Sheet

**Classification:** Civil Engineer V

**Salary Range:** \$6,315 - \$10,210

**Position Title:** Geometrics Engineer

**Union Position:** ☒ Yes ☐ No

**Position Number:** PW115-23-56-303-30-01

**IPR#:** 40547

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#### Office/Central Bureau/District/Work Address:

Division of Highways/Region 4/District 6/Bureau of Program Development, 126 E Ash St, Springfield, IL

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#### Description Of Duties:

This position is responsible for the interpretation of policies and procedures which govern the geometric design, capacity analysis and access control limits of highways. Specifically, these items are directly related to the design of intersections, interchanges, rest areas, weigh stations and highway alignments. This position is also responsible for the development of highway route location and design studies during peak workloads.

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#### Special Qualifications:

##### *The following criteria is required:*

- Valid Illinois Professional Engineer license
- Valid driver's license
- Statewide travel with occasional overnight stays

##### *The following criteria is desired:*

- Nine years experience in civil engineering of which at least five years should be in the specific area of highway engineering, three years of which should have been supervising engineering functions
- Working experience in Studies & Plans and Construction
- Knowledge of the policies and procedures that govern the design of highway projects
- Ability to analyze and solve highway engineering problems
- Strong oral and/or written communication skills

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#### Shift/Remarks:

8:00 am – 4:30 pm / Monday - Friday

**ILLINOIS DEPARTMENT OF TRANSPORTATION  
POSITION DESCRIPTION**

|                     |                       |                         |  |
|---------------------|-----------------------|-------------------------|--|
| <b>DATE:</b>        | July 2015             | <b>POSITION:</b>        | Geometrics Engineer                        |
| <b>APPROVED BY:</b> | <i>Roger Driskell</i> | <b>OFFICE/DIVISION:</b> | Highways/District 6<br>Program Development |
| <b>CODE:</b>        | PW115-23-56-303-30-01 | <b>REPORTS TO:</b>      | Studies and Plans Engineer                 |

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***Position Purpose***

This position is accountable for the interpretation of policies and procedures which govern the geometric design, capacity analysis and access control limits of highways. Specifically, these items are directly related to the design of intersections, interchanges, rest areas, weigh stations and highway alignments. This position is also responsible for the development of highway route location and design studies during peak workloads.

***Dimensions***

|                                  |                   |
|----------------------------------|-------------------|
| Subordinates:                    | 3                 |
| Annual Programs – Intersections: | 60-70             |
| Annual Programs – Interchanges:  | 6-12              |
| Annual Programs – Special        | 10-20             |
| Geometrics/Capacity Studies:     |                   |
| Project Value"                   | \$30-\$60 Million |

***Nature and Scope***

This position reports to the Studies and Plans Engineer as do the Project Engineers, the Environmental Studies Unit Chief, the Hydraulics Engineer, the CADD Unit Chief and a secretary. Reporting to this position are the Assistant Geometrics Engineer, Senior Geometrics Technician and the Geometrics Technician.

This position is accountable for the development of intersection geometrics that conform to state policy and for recommending to the central office any design exceptions to policy. S/He is required to create designs which are cost-effective and often unique, using sound principles of value engineering. The incumbent determines if central office concurrence of geometrics is required prior to inclusion in a pre-hearing design report for presentation to the public at an informational meeting and/or public hearing. S/He approves the review/approval of private and/or commercial development plans to ensure that acceptable levels of operation and safety potential are maintained on state/local systems.

Typical problems include the continuing evaluation of new and innovative policies/procedures, and the resolution of problems associated with proposed designs by district bureaus, county/municipal governments and consultants. The greatest challenge to this position is the application of technical knowledge coupled with keen insight to develop geometric configurations which are appropriate and create an efficient and cost/safety-effective highway improvement with minimal adverse social and environmental impacts.

This position is accountable for developing geometric highway designs, analyzing traffic volumes, proposing access control limits, determining pavement/shoulder/median and right-of-way widths, designing horizontal/vertical alignments, deciding earth slopes, design speed, sight distance, super elevation, and performing capacity analysis for intersections and interchanges. S/He provides advice and guidance to consultants, county, and municipal engineers during their preparation of geometric designs, capacity analysis, cross-section, alignment and slope designs. This position reviews and concurs with geometric designs prepared by other district bureaus, consultants and counties/municipalities including those prepared after construction contracts have been awarded. The incumbent approves those designs which conform to policy.

Those that do not conform to policy are approved by the central office. Functions performed by this position are highly innovative and have specific objectives of fiscal restraints, cost-effectiveness and techniques for the priority selection of such alternate types in terms of cost/safety-effectiveness and mitigation of impact. S/He reviews and/or recommends appropriate accident countermeasures for safety projects to the safety committee for inclusion in the annual program. The incumbent must maintain a state-of-the-art knowledge of appropriate state/federal/local policies and evaluates pertinent research with a view toward improving current practices. S/He develops procedures for the implementation of cited policies and cost-effectiveness analysis of resulting improvements. This position maintains all pertinent policy and procedural information regarding geometric design. The incumbent directs route location and design studies during peak workloads.

Responsibilities are accomplished with the assistance of:

*Assistant Geometrics Engineer, Senior Geometrics Technician and Geometrics Technician* - who are responsible for preparing geometric and/or traffic signal designs according to established policies and standards.

The incumbent exercises considerable latitude in performing the duties of this position. Decisions are based on state/federal policies and experience which incorporate innovation, field observations, educational seminars and current literature. Certification by the Central Bureau of Design and Environment allows this position to approve, without central office concurrence, intersection design studies which are not design exceptions to policy. The incumbent recommends, for approval to the section chief, design solutions for resolving conflicting situations and highly technical problems dealing with interchange and intersection designs.

Internal contacts include the district Bureau Chiefs of: Local Roads and Streets, Program Development and Operations; district staff; and the Central Bureau of Design and Environment. External contracts include consultants, local governmental entities and the general public. This position may require overtime and overnight travel.

The effectiveness of this position is measured according to the accurate and timely completion of assigned tasks. In addition it can be measured by the increase in the safety and mobility afforded the motoring public by the effective use of available funds with the least adverse social and environmental consequences

### ***Principal Accountabilities***

1. Develops geometric designs and determines if central office review of geometrics is required prior to a public hearing or informational meeting. Approves policy consistent designs.
2. Reviews and concurs with geometric designs on state highways which have been prepared by consultants, counties, municipalities, and other district bureaus. Approves policy consistent designs.
3. Reviews and/or prepares safety projects prior to submission to safety committee for inclusion program. Approves policy consistent designs.
4. Reviews and accepts geometric revisions prepared after construction contracts have been awarded. Approves policy consistent designs.
5. Directs route location and design studies during peak workloads.
6. Trains, motivates and evaluates staff.
7. Performs duties in compliance with departmental safety rules. Performs all duties in a manner conducive to the fair and equitable treatment of all employees.
8. Performs other duties as assigned.